



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

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Energy Code Technical Advisory Group Meeting Review Notes for July 23, 2021

TAG Members Present: Kjell Anderson, TAG Chair; *Michael Baranick; Erik Bedell; *Chris Boroughs, Michael Fowler; Patrick Hayes; Gary Heikkinen; Luke Howard; Duane Jonlin; *Elizabeth Joyce; Mike McGivern; Allan Montpellier; Erik Olnon; Irina Rasputnis; David Reddy; Lisa Rosenow; Gavin Tenold; Shaun Vig; Amy Wheelless

TAG Members Absent: CJ Brockway, Martin Connor, Michael Curtright, Scott Henderson, Chris Holliday

Visitors Present: Caroline Traube, Bryan Ahee, Juan Alvarado, E. Anderson, Joe Boros, Andi Burnham, Sean Denniston, Kyle Bergeron, Kevin Duell, John Frankel, Supriya Goel, Nick Harbeck, Emma Johnson, Nels Johnson, Mike Kennedy, Mary Koban, Jonny Kocher, Duane Lewellen, Nick O'Neil, Robby Oylear, D. Scott Peterson, Stan Price, Mark Rehley, Michael Rosenberg, Ben Roush, Shilpa Surana, Eric Vander Mey, Bob Wolfer

Staff: Stoyan Bumbalov, Krista Braaksma, John McEntyre, Stephanie Feuchter

* indicates an alternate member. *^v indicates a voting alternate

Agenda Items	TAG Actions
1. Welcome and Introductions	<p>Meeting called to order at 8:30 a.m. Kjell Anderson welcomed everyone and roll was called.</p> <p>Kjell went over the rules of the meeting—using Zoom reactions to raise hands to speak or ask questions or use other icons to note agreement; removing reactions after they have been acknowledged; mute while not speaking; and be respectful of one another.</p> <p>Patrick Hayes voiced concern that a quorum was not present throughout the entire meeting.</p> <p>Patrick Hayes moved to require a roll call vote if there were any dissenting votes. Duane Jonlin seconded the motion. The motion carried.</p>
2. Review and Approve Agenda	<p>The agenda was approved as written. Lisa Rosenow asked that proposal 192 be reconsidered at an upcoming meeting.</p>
3. Review and Approve meeting notes from July 9, 2021	<p>The minutes of the July 9, 2021 meeting were approved as modified: on 21-GP1-198, the first sentence was modified to read “Patrick Hayes asked how the reduction was derived.”</p>

4. Envelope Proposals	
21-GP1-161	<p>Proponent: Duane Jonlin, City of Seattle Subject: Table C402.4, Reduce fenestration U-values.</p> <p>Duane Jonlin introduced a modified version of his proposal that allows fixed and operable windows to be area weighted.</p> <p>MOTION: Duane Jonlin moved to recommend approval as modified. Mike Fowler seconded the motion.</p> <p>The TAG discussed availability over various window types and whether a double pane window would be able to meet code.</p> <p>MOTION: Patrick Hayes moved to change the value for a to 0.31 and d to 0.23. Erik Bedell seconded the motion.</p> <p>The TAG discussed breaking out fixed versus operable windows, and what do you use as a baseline for the new allowance for the combination of fixed and operable windows.</p> <p>MOTION: Patrick Hayes moved to table discussion. Amy Wheelless seconded the motion. Motion carried, 12 to 2 with one abstention. Duane will work with interested parties on a revision.</p>
5. New Service Water Heating and DOAS Proposals (From 7/9/21)	
21-GP1-177	<p>Proponent: Duane Jonlin, City of Seattle Subject: C404.11.1, Pool water heaters</p> <p>Duane Jonlin said this proposal prohibits electric resistance heating for pools over 2000 gallons, which is equivalent to about a 10-foot round pool about 4 feet deep. This proposal also corrects the referenced standard.</p> <p>MOTION: Gary Heikkinen moved to recommend approval as submitted. Amy Wheelless seconded the motion. Motion carried.</p>
21-GP1-099	<p>Proponent: Sean Denniston, New Buildings Institute Subject: C404.14, Demand responsive water heating</p> <p>Sean Denniston noted that if the proposal for heat pump water heaters is approved, the incremental cost for this would effectively be zero; it is a common feature included on a lot of the heat pump water heaters.</p> <p>MOTION: Duane Jonlin moved to recommend approval as submitted. Mike McGivern seconded the motion.</p> <p>There was concern voiced that this would conflict with Commerce requirements for storage water heaters. Sean stated this was intended to go beyond the Commerce requirements to cover a larger portion of the market. There was also concern expressed as to how this could be integrated with the utilities.</p>

	<p>MOTION: Amy Wheelless moved to table the discussion. Patrick Hayes seconded the motion. The motion carried. Sean Denniston will work with AHRI, Bradford White, Amy Wheelless and Commerce on a revised proposal.</p>
21-GP1-111	<p>Proponent: Lisa Rosenow, Evergreen Technology Consulting Subject: C403.3.5.1, DOAS DCV Exception</p> <p>Lisa Rosenow introduced a revised proposal that adds in details from Duane Jonlin's proposal 165.</p> <p>MOTION: Duane Jonlin moved to recommend approval as modified. Erik Bedell seconded the motion. Motion carried.</p>
21-GP1-165	<p>Proponent: Duane Jonlin, City of Seattle Subject: C403.3.5.1, ERV with DOAS</p> <p>Duane noted the two things not picked up by Lisa's proposal were the change to the charging sentence removing the sensible energy efficiency and increasing enthalpy recovery and the addition of a third exception for R-1 and R-2 to comply via sensible recovery. It was noted that energy recovery is only required in R-2.</p> <p>It was suggested that not all heat recovery ventilators have an enthalpy rating, so it may be advantageous to retain the sensible recovery rating. Duane accepted that as a friendly amendment to his proposal, and suggested modifying the sensible recovery rating to 68 percent. There was general TAG consensus.</p> <p>MOTION: Duane Jonlin moved to recommend approval as modified. Lisa Rosenow seconded the motion. The motion carried.</p>
21-GP1-239	<p>Proponent: Henry Odum, Ecotope Subject: C403.3.5.5, DOAS Tempering</p> <p>The proponent was not available to discuss the proposal.</p> <p>MOTION: Patrick Hayes moved to recommend disapproval. Motion died for lack of a second. Lisa Rosenow moved to table the discussion. Duane Jonlin seconded the motion. The motion carried.</p>
21-GP1-110	<p>Proponent: Lisa Rosenow, Evergreen Technology Consulting Subject: DOAS Fan Power</p> <p>Lisa Rosenow said that the helpline received a lot of questions on how to calculate watts per cfm, so this proposal introduces a new equation. It also provides clarification and corrections to the existing language.</p> <p>There were questions on how the calculation would affect VAV systems and other proposals. The TAG felt it may be advantageous to review 138 first.</p> <p>MOTION: Lisa Rosenow moved to table the discussion. Duane Jonlin seconded the motion. The motion carried.</p>

	<p>Later in the meeting, Lisa provided a revision to her proposal that coordinated with the changes in 038 (see below). It was noted that this may need to be modified depending on the outcome of some of the C406 proposals.</p> <p>MOTION: Mike Fowler moved to recommend approval as modified. Lisa Rosenow seconded the motion. The motion carried.</p>
21-GP1-138	<p>Proponent: Nicholas O'Neil, Energy 350 Subject: Fan Power Allowance tables</p> <p>Nick O'Neil stated that this proposal moves the fan power limitation threshold down to 1 kW and introduces tables from Title 24, with some changes to align with the WSEC, to make the code 10 to 20 percent more stringent. He noted it wasn't overly burdensome for designers, but requires better designs to keep the watts per cfm lower. The engineers felt this was already being done from the design standpoint but had concerns about application to existing ductwork.</p> <p>MOTION: Duane Jonlin moved to recommend approval as modified. Mike McGivern seconded the motion. The motion carried.</p>
21-GP1-113	<p>Proponent: Lisa Rosenow, Evergreen Technology Consulting Subject: DOAS Sensible Recovery Effectiveness</p> <p>Lisa Rosenow said one of the things this proposal does is introduce a calculation for sensible recovery effectiveness, but is recommending a modification to that equation to remove the CFM multipliers. The proposal also adds an exception for smaller equipment to be rated to HVI 920, and clarifies applicability of the energy recovery exemption.</p> <p>MOTION: Lisa Rosenow moved to recommend approval as modified. Mike Fowler seconded the motion. Motion carried</p>
21-GP1-187	<p>Proponent: Mike Kennedy Subject: C403.8.1, DOAS Allowable fan motor horsepower</p> <p>This proposal was withdrawn by the proponent.</p>
21-GP1-188	<p>Proponent: Mike Kennedy Subject: C403.2.2, Over 150% Ventilation - DOAS ERV</p> <p>Mike Kennedy said this proposal allows up to 200 percent ventilation with high efficiency heat recovery but prevents them from using C406.6.</p> <p>TAG consensus was to modify exception 2 to clarify this was only applicable within dwelling and sleeping units and not the corridors or common spaces.</p> <p>MOTION: Duane Jonlin moved to recommend approval as modified. Lisa Rosenow seconded the motion. The motion carried.</p>
<p>6. 10am Key Issue Review/Discussion:</p> <p>Heat Pump Space Heating</p>	
21-GP1-103	<p>Proponent: Jonny Kocher, RMI Subject: Heat Pump Space Heating</p>

Kjell Anderson reminded the TAG that they previously approved the proposal at the July 16 meeting with the caveat that it may be further modified after the proponent met with stakeholders. Therefore, today the TAG would be reviewing only those changes and not the proposal as a whole. Kjell would like to go through those changes one by one. There were also some minority proposed modifications along with the work group modifications to be considered after the main proposal is concluded.

Jonny Kocher introduced the working group's [modifications to his proposal](#). The group consisted of Chris Boroughs, Emma Johnson, Kevin Duell, Eric Vander Mey, Amy Wheelless, Caroline Traube, Shaun Vig, Allan Montpellier, Henry Odum, Lisa Rosenow, Mike Kennedy, The TAG went through them one by one and provided some further modifications to the language

MOTION: Allan Montpellier moved to recommend approval of Exception 7 (Ground source heat pumps) to C403.1.4 (Proposal Change #1) as modified by the TAG. Amy Wheelless seconded the motion. The motion carried.

MOTION: Duane Jonlin moved to recommend approval of Exception 10 (Kitchen make-up air) to C403.1.4 (Proposal Change #2) as modified by the TAG. Gary Heikkinen seconded the motion. The motion carried.

Amy Wheelless moved to reconsider the previous motion and further amend by adding an "s" to fossil fuel. Erik Olon seconded the motion. The motion failed, 2 to 12.

MOTION: Erik Olon moved to recommend approval of Exception 15 (Freeze protection) to C403.1.4 (Proposal Change #3) as modified by the TAG. Erik Bedell seconded the motion. The motion carried.

MOTION: Duane Jonlin moved to recommend approval of Exception 16 (DOAS ERV auxiliary heat) to C403.1.4 (Proposal Change #4) as modified by the TAG. Patrick Hayes seconded the motion. The motion carried.

MOTION: Duane Jonlin moved to table discussion of the changes to Section C503.4 (Proposal Change #5) until the next meeting. It was generally felt this section needed more work. Lisa Rosenow seconded the motion. The motion carried.

[Final version](#) as amended by the TAG, pending modifications to Chapter 5.

The TAG then went on to review the two minority report amendment proposals prepared by Kevin Duell, Chris Boroughs and Gary Heikkinen. Kevin Duell also shared a [brief slideshow](#) from a British Columbia study on greenhouse gas reduction. The [first proposal](#) is to allow gas appliances with a COP greater than 1 and allow supplemental gas heating. There are also provisions to allow gas appliances in small buildings and temporary heating systems.

MOTION: Duane Jonlin moved to disapprove the modifications to 21-GP1-103 proposed by this minority report. Mike Fowler seconded the motion. The motion carried, 11 to 3 with one abstention.

	<p>The second minority proposal followed Jonny's proposed changes. The TAG moved through it item by item as they did Jonny's changes. There was no change to Jonny's proposal change #1.</p> <p>MOTION: Patrick Hayes moved to recommend approval of Exception 10 (Kitchen make-up air) to C403.1.4 (Proposal Change #2) as modified by the minority report. Chris Boroughs seconded the motion. The motion failed, 2 to 13.</p> <p>MOTION: Patrick Hayes moved to recommend approval of Exception 15 (Freeze protection) to C403.1.4 (Proposal Change #3) as modified by the minority report. Erik Bedell seconded the motion. The motion failed, 4 to 11.</p> <p>MOTION: Gary Heikkinen moved to recommend approval of Exception 16 (DOAS ERV auxiliary heat) to C403.1.4 (Proposal Change #4) as modified by the minority report. The motion died for lack of a second.</p> <p>MOTION: Duane Jonlin moved to recommend disapproval of the added Exception 17 (Renewable fueled appliances) to C403.1.4 (Proposal Change #6). Erik Bedell seconded the motion.</p> <p>Gary Heikkinen and Lisa Rosenow moved to table discussion on this item until some suggested revisions could be provided, limiting the scope. That motion failed, 3 to 11.</p> <p>The question was called on the original motion for disapproval. The motion for disapproval carried, 12 to 2.</p>
C407 Total Building Performance	
21-GP1-070	<p>Proponent: Michael Rosenberg Pacific NW National Subject: 407 Total Building Performance</p> <p>Michael Rosenberg said there were four meetings of the workgroup to discuss changes, although they did not reach consensus on much of the revised proposal. He noted some of the factors would need to be adjusted based on actions on other proposals. That could be done through the public comment period.</p> <p>MOTION: Gavin Tenold moved to reduce the Renewable Energy Factor under Table C407.3.2.1 to 0.3 for all off-site locations to account for distribution losses. The motion failed for lack of a second.</p> <p>The TAG debated the proposed requirements for energy modeler qualifications under C407.3 Item 9, but did not come to consensus. The TAG did agree to modify Table C407.3.2.1 for Renewable Energy Factors for sources outside the state.</p> <p>MOTION: Duane Jonlin moved to recommend approval as modified, with the caveat that C407.3 Item 9 be reviewed for further modification. And with the understanding that the Building Performance Factors would need later adjustment. Mike Fowler seconded the motion. Motion carried.</p>

21-GP1-117	<p>Proponent: Mike Baranick, Hargis Engineers Subject: 407.2 & 407.3, Mandatory Requirements</p> <p>Michael Baranick withdrew his proposal, since it had been incorporated into Mike Rosenberg's 21-FP1-070.</p>
7. Mechanical Proposals Tabled on June 25	
21-GP1-119	<p>Proponent: Mike Baranick, Hargis Engineers Subject: 403.1.1, HVAC TSPR</p> <p>This proposal was withdrawn by the proponent.</p>
21-GP1-069	<p>Proponent: Michael Rosenberg Pacific NW National Subject: 403.1.1 and App D, HVAC TSPR</p> <p>Mike Rosenberg shared a slideshow on his TSPR update proposal. The TAG discussed the expansion to R-2 and clarifications regarding other occupancy types. The TAG also suggested a clarification of exception 1 to C403.1.1.</p> <p>MOTION: Duane Jonlin moved to recommend approval as modified. Lisa Rosenow seconded the motion. The motion carried, 12 to 0 with one abstention.</p>
	The remaining proposals will be moved to the July 30 agenda.
8. Mechanical Proposals Tabled on June 11	
These proposals will be moved to the July 30 agenda.	
9. Other Business	None/not entertained due to time constraints
10. Adjourn	The meeting was adjourned at 3:06 p.m.